



COMPARATIVE ANALYSIS BETWEEN ULTRASOUND MEASUREMENTS AND ANTHROPOMETRIC INDICATORS OF THE THYROID GLAND OF HEALTHY CHILDREN

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ABSTRACT

This article presents a comparative description of ultrasound dimensions of the thyroid gland and anthropometric measurements of the head in healthy 5-year-old boys and girls. The results of the study revealed significant changes in the ultrasound dimensions of the thyroid gland and head dimensions in 5-year-old girls compared to boys of the same age.

Relevance of the topic. Our country according to researchers, the prevalence of iodine deficiency diseases remains high in the world, including in Uzbekistan (Ismailov S.I., Rashitov M.M., 2016). Thyroid gland diseases are one of the common pathologies of people living today. The prevalence of diseases varies in different geographical and social regions, which mainly depends on the level of iodine intake of the population (Glushakov R.I. et al., 2017).

World scientists say that despite the success in diagnosis and treatment of thyroid diseases in children, its initial symptoms are detected and diagnosed late. As a result, this situation affects the quality of treatment for children (Taylor PN et al., 2013; Moon JH et al., 2018).

Information from scientific sources has shown that the structure of the thyroid gland is not stable and environmental factors play a very important role in its formation. Therefore, the thyroid gland is a sensitive organ to the effects of changes occurring in the body, which is now manifested as a sign of environmental problems (Lundback V. et al., 2017; Ryabukha OI et al., 2021).

Like other diseases in humans, childhood is a very important and difficult period for the diagnosis and treatment of thyroid diseases.

Studying the normal dimensions of the thyroid gland and its pathology using ultrasound is the most effective and safe method (Burch HB, et al. 2016).

Ultrasound examination can provide clinically useful information about thyroid gland dimensions and changes in gland parenchyma (Blum. Manfred, 2020). Among children, thyroid disorders with changes in the size of the thyroid gland are common, and this condition has been identified as causing many different forms of disability (Haugen BR, et al., 2016).

In the world, it is one of the important tasks to ensure the health of children by evaluating the activity of the thyroid gland and comparing it with the indicators of physical development. In recent years, endocrine diseases, including thyroid gland diseases, have increased significantly due to the global

disturbance of the earth 's ecological environment .

Diseases of the thyroid gland occur in 8-20% of children worldwide, among patients with endocrine pathologies . According to the World Health Organization (WHO), more than 200 million people suffer from this pathology , and in endemic areas , this figure exceeds 50% [7,9].

Iodine deficiency diseases are all pathological conditions associated with iodine deficiency in the environment . Inadequate consumption of iodine in the body leads to disruption of thyroxine synthesis. As a result of hypo or hyperfunction of the thyroid gland, diffuse changes are observed in the tissue of the gland . This has an impact on the physical and mental development of children [6,10].

Changes in thyroid gland activity at different levels have different effects on children's physical indicators . Anthropometric indicators are a conditional measure of the physical strength of the body, which determines its life indicators . A set of morphofunctional signs that determine the composition of the child's body , mechanical and functional characteristics, it is, first of all, the ratio of the total height (height , body weight, body length , chest and chest size and head circumference) . clearly distinguished [3,8].

Adaptability of the organism , it is possible to enter the physical development and morphological data, including the morphometer, into the organism of a child . To date, a comprehensive study of thyroid morphology with complete data has not been carried out in many countries of the world, although these data could be useful in practical medicine and additionally fill the regional data bank on the physical development of the population of the region [1, 5].

The purpose of the study: Ultrasonographic dimensions of the thyroid gland in healthy 5 -year-old boys and girls and comparative analysis between head sizes to study comparative characteristics .

Material and methods

To carry out this research work in Bukhara

We used children of the private pre-school educational institution "Bukhara Stars" . Children were divided into 2 groups (n=102): I- group of 5-year-old boys (n=50); II- a group of 5-year-old girls (n=52) was selected in advance and the results of the examination were studied. The study was conducted by a doctor of endocrinology supervision and a doctor of UTT in the diagnostic department of Bukhara city endocrinologist or dispensary . The results of the ultrasound anatomy of the thyroid gland were obtained during the ultrasound examination . The research was conducted on the SONOACE R3-RUS device with linear (7.5 MHz) and convex (3.5 MHz) transducers. Children's head sizes were measured on centimeter tapes and the results were recorded on individual questionnaires for each child.

Results and analyses

Studies have shown that in 5-year-old boys , the length of the right lobe of the thyroid gland is from 1.9 to 2.8 cm, the average is 2.5 ± 0.028 cm, the width is from 0.9 to 1.2 cm, the average is 1 , it was found that 0 ± 0.009 cm has changed. The length of the right lobe is from 0.9 to 1.9 cm, the average is 1.4 ± 0.031 cm . The volume of the right lobe of the thyroid gland was from 0.7 to 3.1 cm³, the average was 1.6 ± 0.072 cm³.

In boys of this age, the length of the left part of the thyroid gland is from 2.0 to 2.8 cm, the average is 2.5 ± 0.025 cm , the width is from 0.8 to 1.2 cm, the average is 1.0 ± 0.012 cm and thickness from 0.9 to 1.7 cm, average - 1.2 ± 0.025 cm , The volume of the left hemisphere

in 5-year-old boys is from 0.7 to 2.7 cm³, the average is 1.4 ± 0.063 cm³, and the height is from 0.18 to 0.30 cm, the average is 0.26 ± 0.005 cm, as it was determined that the clock had changed.

Studies have shown that the ultrasound parameters of the hypothyroid right lobe have changed dynamically in relation to the age of the children. In 5-year-old girls, the length of the right part of the thyroid gland is from 1.9 to 2.6 cm, the average is 2.4 ± 0.022 cm, the width is from 1.0 to 1.3 cm, the average is 1.2 ± 0.009 cm and the thickness is from 1.0 to 1.6 cm, the average is 1.4 ± 0.019 cm. equal The volume of the right lobe without a thyroid gland at this age is from 0.9 to 2.6 cm³, the average is 1.9 ± 0.052 cm³.

In 5-year-old girls, the length of the thyroid lobe is from 1.8 to 2.5 cm, the average is 2.3 ± 0.022 cm, the width is from 1.0 to 1.3 cm, the average is 1.2 ± 0.009 cm and its thickness varied from 1.0 to 1.5 cm, on average - 1.3 ± 0.016 cm. The volume of the thyroid gland in 5-year-old girls ranges from 0.9 to 2.3 cm³, the average is 1.7 ± 0.046 cm³ and the height of the gland is from 0.20 to 0.45 cm, the average is 0.32 ± 0.014 cm.

Figure 1 shows gender differences in the size of the left and right parathyroid glands of 5-year-old boys and girls.

In the examination, the size of each piece of the gland J.Brunn et al. (1981y) when studied using the formula An ultrasound scan of the thyroid gland showed that the width of the thyroid gland in 5-year-old boys was 0.60 mm longer in the right lobe, and 0.50 mm in the left lobe, compared to girls of the same age. In girls, the thickness of the gland is 0.20 mm larger in the right and left lobes than in boys. The length of the right lobe of the thyroid gland was found to be 1.60 mm longer in 5-year-old boys compared to girls of the same age, while the length of the left lobe was 1.80 mm. It was found that the volume of the right and left lobes of the thyroid gland of 5-year-old girls increased by 0.20 cm³ compared to boys of the same age.

Table 1 presents a comparative analysis of the head sizes of 5-year-old healthy boys and girls.

Table No. 1

A comparative analysis of head sizes in 5-year-old children

No	k indicators (cm)	5 years old children (n = 102)	
		boys (n = 50)	girls (n = 52)
1	head size	15.7 ± 0.08	15.8 ± 0.07
2	the diameter of the head	12.1 ± 0.06	12.6 ± 0.07
3	head circumference	51.1 ± 0.20	51.0 ± 0.17

Anthropometric studies of 5-year-old girls and boys showed that there were no gender differences in head circumference, circumference and head circumference.

Summary

According to the obtained data, the morphometric parameters of the thyroid gland lobes: the length, width, thickness and height of the gland neck have different growth indicators and differ depending on the child's gender characteristics and age periods. It is necessary to take this feature into account when developing "standard" indicators. Based on

the obtained results, it should be noted that diseases of the endocrine system, especially pathologies related to the thyroid gland, have an impact on children's health and physical development.

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